

**NORTH CAROLINA
LAPIDARY SOCIETY**

**February
1982**



Stone Cutter

MEETINGS:

Third Thursday each month.
GEMCRAFTERS
2106 Patterson St.
Greensboro, NC 27407



MEETING DATE : February 18, 1982
TIME : 7:30 PM
PLACE : GEMCRAFTERS
2106 Patterson St.
Greensboro, NC
PROGRAM : A club lapidary project you
wouldn't believe -
THE JADE CLOCK AND HOW IT WAS
MADE OF JADE
A slide/tape program on the clock's
construction by San Francisco Gem
and Mineral Society.

OFFICERS 1982

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EXECUTIVE BOARD meets at the call of the president.

MEMBERSHIP DUES : \$12.00 per year - prorated quarterly.

STONE CUTTER subscriptions: \$5.00 per year.

STONE CUTTER advertising rates: full page, \$40.00; half
page, \$20.00; quarter page, \$ 10.00.

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FROM THE EDITOR'S DESK

MEETING DATE CHANGED - Please note that our meeting date has been changed to the THIRD Thursday in each month. This action was taken at the January meeting to allow sufficient time for the U.S. Postal Service to deliver the STONE CUTTER which now travels by bulk mail.

WELCOME TO NEW MEMBERS AND SUBSCRIBERS - We are happy that you have joined our group! Our primary purpose is to advance the Gem and Mineral hobby. Foremost among our interests is faceting but we do not exclude other aspects of the gem cutting arts such as cabochon cutting, carving and intarsia.

The STONE CUTTER has an editorial objective to present information of instructive and educational value. Original articles are presented on all aspects of the lapidary hobby and there is usually included a new faceting design by a member of NCLS or a STONE CUTTER subscriber. All members and subscribers are encouraged to submit for publication tips, hints, methods, articles and facet designs that we can share with others. You don't have to be an accomplished writer or artist to get your facet designs or articles into print. Just send a rough draft with the angles and index settings you used and we'll do our best to edit to your satisfaction. Full credits to you, of course.

STONE CUTTER does its best to adhere to the "Prime Directive" of editorial conduct. Whenever we reprint or "borrow" items of interest from another bulletin or newsletter, full credit is always given to the author and to the publication from which the item was obtained - even the jokes.

WRITE A LETTER TO THE EDITOR!! Your comments, good or adverse, will be appreciated. They will help us make STONE CUTTER the kind of bulletin that will serve you best.

NEW COMMITTEE CHAIRMEN APPOINTED - Three new committees have been formed to carry out the functions and objectives of NCLS. Names of the Chairmen are below. You may be asked to help. Please say YES - or better VOLUNTEER!

Ways and Means - Henry Sykes.

Constitution and ByLaws - Dennis Walters.

Displays and Exhibits - Eleanore Larson.

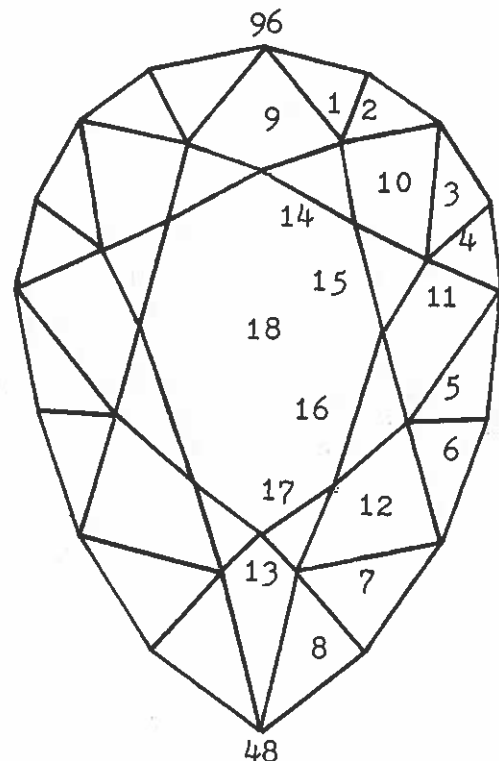
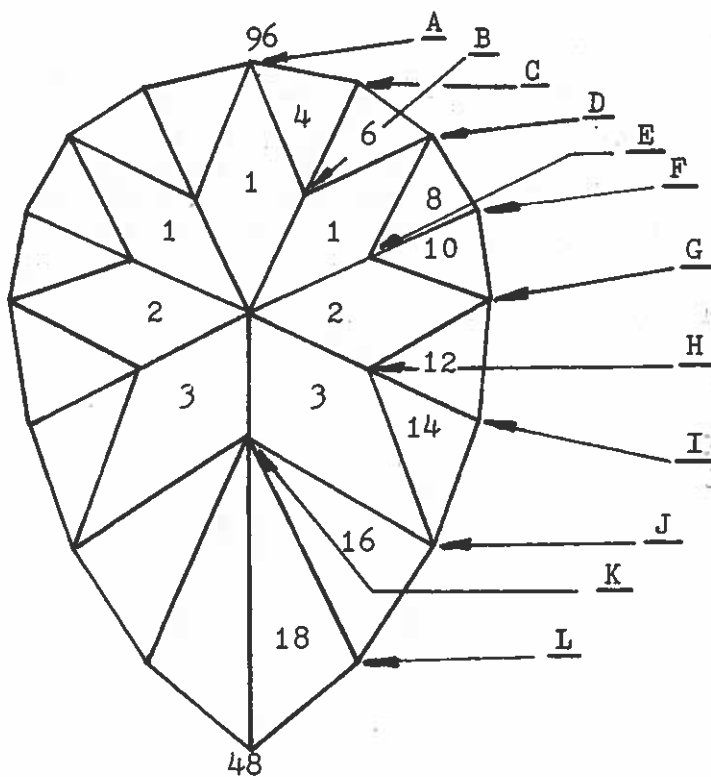
NEW FEATURE AT MONTHLY MEETINGS - Beginning in February each member is requested to bring and show at least one (more if possible) stone or lapidary project he or she has completed since the previous meeting.

CLUB CASE TO BE DISPLAYED AT RALEIGH AND CHARLOTTE SHOWS - All members are asked to get their stones ready for these displays. Let's give Eleanore Larson and her committee lots of material to work with. Exhibits at Charlotte will be in competition. Put our best work forward!

DIAMOND CUTTERS' PENDELOQUE

by Tom Ricks

This design is derived from a sketch of a "modern" pendeloque as cut by diamond cutters. The original drawing was found in the book, "Diamond Cutting", by Basil Watermeyer, originator of the Barion Cut. No angles or index settings intelligible to the hobby faceter were given. The data herein were developed by trial and error. The resulting length/width ratio is approximately 1.4 to 1. Close enough for most commercial mountings. This is a Meet Point design. No preform is needed. A 96 index gear is used.



DIAMOND CUTTERS' PENDELOQUE - Cutting instructions.

PAVILION

<u>STEP</u>	<u>ANGLE</u>	<u>INDEX</u>	<u>COMMENT</u>
1.	44.5°	96-13-83	Cut to same stop. Establish culet.
2.	43.5°	26-70	Cut to culet.
3.	40.25°	32-64	Cut to culet.
4.	46.5°	03-93	Cut to same stop. Establish point A.
5.	90°	03-93	Cut to Point A. Level girdle.
6.	46.75°	09-87	Cut to point B.
7.	90°	09-87	Cut to point C. Level girdle.
8.	46.75°	16-80	Cut to point D.
9.	90°	16-80	Cut to point D. Level girdle.
10.	46.75°	21-75	Cut to point E.
11.	90°	21-75	Cut to point F. Level girdle.
12.	44°	27-69	Cut to point G.
13.	90°	27-69	Cut to point G. Level girdle.
14.	43°	30-66	Cut to point H.
15.	90°	30-66	Cut to point I. Level girdle.
16.	40.25°	33-63	Cut to point J.
17.	90°	33-63	Cut to point J. Level girdle.
18.	37.5°	36-60	Cut to point K.
19.	90°	36-60	Cut to point L. Level girdle.

CROWN

<u>STEP</u>	<u>ANGLE</u>	<u>INDEX</u>	<u>COMMENT</u>
1.	41.5°	03-93	Break facets. Match girdle facets. Cut to level, even girdle. Each set of break facets requires a different height setting of the facet head.
2.	42°	09-87	
3.	42.25°	16-80	
4.	44°	21-75	
5.	40.5°	27-69	
6.	43.5°	30-66	
7.	42.25°	33-63	
8.	45.5°	36-60	
9.	37°	96	Main facets. Cut to "meets" at girdle. Different height setting of facet head for each set of facets.
10.	37°	13-83	
11.	37.5°	26-70	
12.	39°	32-64	
13.	29°	48	Star facets. Cut to meet tips of breaks. Different height setting of facet head for each set of facets.
14.	25°	06-90	
15.	25°	19-77	
16.	25°	29-67	
17.	26°	35-61	
18.	0°	ANY	TABLE.

DON'T FORGET - March 19-21 HICKORY, NC Catawba Valley Gem and Mineral Club Show. Always a very good Show and the exhibits are exceptionally fine. I learn much about exhibiting and case construction every year at the HICKORY, NC Show. Ed.

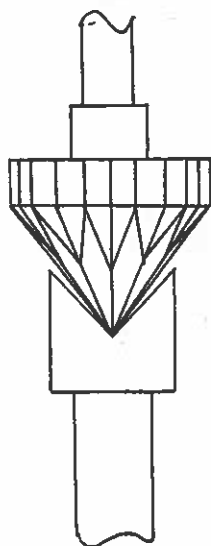
STOP THAT SHIFT

Portions from FACETS and
Ultra Tec Newsletter.

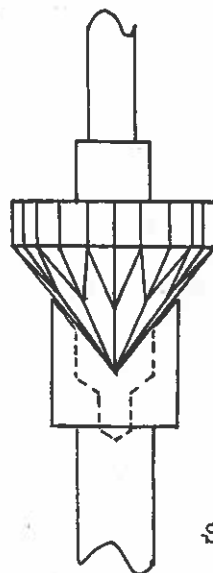
Many experienced faceters complain they are having trouble with the transfer process in that their stones seem to shift during transfer so that they don't achieve a level even girdle when faceting the opposite side of the stone. This problem occurs without having made any change in the transfer techniques. Sometimes uneven girdle problems are the result of inaccurate re-alignment of the stone in the faceting machine after transfer rather than a shift of the stone in transferring. For example, a saw-tooth girdle on a round stone is the result of misalignment rather than shifting of the stone on the dop. However, when shifting on the dop does occur, either during transfer or due to the heat generated in polishing, it is a frustrating and disconcerting experience. Here are two suggestions that could help prevent shifting.

DRILL YOUR DOPS - Most female dops, both round and "vee", supplied with faceting machines or available for purchase are made so that the culet of the stone bottoms in the dop before the sides of the pavilion are in contact with the sides of the dop. This is an invitation to the stone to shift as illustrated in Sketch 1. While this does not happen on all stones, it becomes acute when the stone has a deep pavilion such as marquises with point culets, pendeloques and hearts.

A simple method of eliminating this problem is to drill a hole in the bottom of the receiving dops. On larger dops a small drill followed by a larger one may be needed. This allows the culet of the stone to go deeper into the dop as illustrated in Sketch 2. Holes should be drilled accurately in a lathe or a drill press where the dop can be securely clamped. Use of a hand drill could cause more problems than you are trying to solve. Try it. You'll like it.



SKETCH #1



SKETCH #2

TRY NO-WAX DOPPING - Commonly available dopping waxes and shellacs are very prone to soften with even a little heat thus allowing the stone to shift. Also, a little known fact is that these compounds will "cold flow" under pressure even when insufficient heat is generated to soften the wax. For these reasons many faceters have abandoned the use of dop wax altogether.

continued on Page 7

STOP THAT SHIFT, con't.

A cure for the problems associated with dop waxes lies in the use of modern adhesives, the cyano-acrylates such as Eastman 910 and Super Glue, and good old 5-minute epoxy. The procedure is simple and easy to explain and use.

FIRST - Dop initially to a flat surface (sawn, ground or polished) using just a little, very little, of one of the cyano-acrylates. Contrary to popular impression these, when used on stones and dops, do not set up immediately. There is plenty of time to adjust the position of the stone on the dop. Allow this to set up completely. My experience is that 10 to 15 minutes is adequate. The more glue you use the longer it takes.

SECOND - When you have finished the pavilion, clean the stone and the receiving dop with alcohol. Use 5-minute epoxy as the adhesive in the receiving dop. Some faceters thicken the epoxy with corn starch. I have tried this system both with and without the thickener and find no difference. Use very little epoxy. The more you use the more trouble it is to remove it from the finished stone. Press the pavilion of the stone into the receiving dop in the transfer fixture.

THIRD - Place the complete assembly, transfer fixture and all, into a cold oven and bring the temperature to 200 degrees. Leave it at this temperature for about 30 minutes then turn the oven off. WAIT for about 30 more minutes before you take the assembly out of the oven. Then allow everything to cool to room temperature. You will find that the heat has cured the epoxy and at the same time has caused the cyano-acrylate glue to become brittle so that a light tap on a hard surface will remove the dop. Glue remaining on the stone and dop can be removed with a knife or fingernail.

If you're in too much of a hurry to wait for the oven try this. With the stone pressed between the dops in the transfer fixture, apply heat from an alcohol lamp to both dops, heating first one then the other. This will have the same effect as the oven procedure. A little practice will tell you how much heat is needed. The clear epoxy will turn slightly amber in color as it cures. Let everything cool. You can test the epoxy with a fingernail to see if it has cured.

FOURTH - When you have finished the crown, heat the dop with the alcohol lamp until the epoxy releases its grip. This takes considerably more heat than the curing process. Excess epoxy on the stone can be removed by soaking in Attack or another epoxy solvent.

ANOTHER METHOD - Just as we thought we had solved all the dopping problems comes this tip from Max Strauss of Westlake Village, CA. Max uses the cyano-acrylates on both ends. He uses "HotStuff" and "Super T" and uses Nitro-Methane as a fast solvent. Nitro-Methane is the stuff used to soup-up gasoline for use in racing cars and is hard to find unless you know a racing car enthusiast. Data on "Hot Stuff" and Super 'T' is available at rock shops or by writing Satellite City Dept. L, PO Box 836, Simi, CA 93065.

CUTTING THE INVOLUTE BRILLIANT

by

Pauline Keeney

The Editor of the STONE CUTTER has suggested that I describe my New Year's Day experiences cutting the Involute Brilliant. If this item reads like a comedy of errors, that is the way it was! This "sportscast" will be a play-by-play report... with some not-so-instant replays and weighty decisions made without benefit of instructions from a coach.

The Involute Brilliant, a faceting design of W. Taylor of Indian Harbor Beach, FL, was published in the Lapidary Journal, June, 1978. To a faceting student the idea of facets in the form of a spiral winding from culet to table was challenging. The instructions were read and re-read many times. With each burst of enthusiasm there was some reason why it could not be done..."that is too hard for a beginner"... "you can't do that on your machine"... "it requires a lot of skill in using the cheater"... "it won't show up well in a transparent stone". The fascination of the cut increased with each rebuff. Years later, with a different machine and some experience with a "cheater", working out this design seemed to be just the thing to keep one alert while watching two parades and three Bowl Games.

A review of the instructions resulted in an immediate block. The instructions were written for a 96 index while the machine had a well-adjusted 64 index. Should time be spent changing and adjusting the index or should transposing be attempted? Decision I... transpose the 3, 9, 15 and subsequent indices to the 2, 6, 10 and following positions on the 64 index.

Selecting a large piece of Waterford Crystal (broken with the assistance of UPS), dopping and cutting Row 1 of the pavilion were completed with no problems. Row 2 was a different matter. How should the "cheater" be set? The instructions gave a complicated procedure for determining the value of cheater index markings in degrees. For some reason the manufacturer had marked a 1.5 on the cheater... why not interpret this as degrees? Decision II was to use the 10 marking on the cheater as the 1.0 degree CW needed. This worked well for the first setting only ... there was no spiral moving clockwise as shown in the diagram. A "replay" indicated the need for another approach. Decision III was to reverse the order of the indices... 62, 58, 54 and so on. This worked! Following a mathematical determination for a cheater marking for $1/3$ degree, Row 2 became a matter of matching the left end of the facet being cut with the right end of the preceding facet.

Row 3 was described as "Crossing the Arc". This appeared to be another row of problem solving. However, all that was needed was the determination of cheater markings representing the $1\frac{1}{3}$ degrees for the facet to be cut on the 62 position and the changes to $2/3$ and 0 degrees at the indices noted in the instructions. The spiral reached the girdle!

The crown was quite easy to cut. The same procedure could be used with only the determination of different cheater settings for Rows 2 and 3. This game was now a runaway!

Decision IV, made after careful scrutiny of the rough cut, was to repeat the procedure using pre-polish and polishing laps. Re-examination and re-evaluation of the results will undoubtedly indicate steps that might have been performed differently, more accurately and more scientifically. However, the resulting 12mm glass gem will always represent a challenge met, a reward for persistence, and the beginning of a Happy New Year of faceting.

OPEN FACETING COMPETITION

SEE STONE CUTTER JANUARY, 1982

FOR COMPETITION DETAILS AND JUDGING POINTS

ALL NORTH AND SOUTH CAROLINA FACETERS ARE ENCOURAGED TO PARTICIPATE
ENTRY APPLICATIONS AND INFORMATION ARE AVAILABLE

AT : GEMCRAFTERS
2106 Patterson St.
Greensboro, NC 27407

ENTRY FORM ALSO ON PAGE 10 - JUST CLIP AND MAIL TO ABOVE

THERE IS NO ENTRY FEE. IT COSTS YOU NOTHING TO PARTICIPATE

PRIZES AND AWARDS

ULTRA TEC Faceting Machine Co. will provide one of its well-known
Award Plaques for the high-scoring entry in each class.

SCIENCE HOBBIES, Inc. of Charlotte will provide a selection of
facet rough, natural and synthetic (value \$50.00 or more)
for award to the high-scoring three-stone entry.

Blue, Red and White Ribbons will be presented to First, Second and
Third place entries in each class.

ENTRIES MAY BE SUBMITTED BY MAIL OR HAND-CARRIED TO N.C. LAPIDARY SOCIETY
AT THE ABOVE ADDRESS AT ANY TIME DURING BUSINESS HOURS OR MAY BE DELIVERED
TO THE SHOW SITE DURING THE SET-UP DAY (THURSDAY, APRIL 29) BETWEEN NOON
AND 4:00 PM. MAILED ENTRIES MUST BE RECEIVED NOT LATER THAN APRIL 28, 1982.

AWARDS AND PRIZES WILL BE PRESENTED ON SUNDAY, MAY 2 IN THE AFTERNOON.

TO REMOVE TEMPTATION -

The Mogok Mines of Burma several generations ago produced nearly all
the world's rubies, and it was the rule there at the time that each miner
had to wear a padlocked mesh cage around his head to prevent him from
swallowing any of the stones.

from GRAB BAG, SF Chronicle/Examiner via Solano Chieftain

MORE ON RE-FINISHING POLISHING LAPS - from E. M. Hudspeth, Corpus Christi, TX

"I use a PSC lap with 50,000 grit. My lap got scratched so I ground it
on a sheet of glass using 600 diamond compound and extender fluid - like new
in 20 minutes."

HINT - Saw slices out of colored bottles for super geode stands. Sand the edges.
via PEGMATITE - SAN DIEGO

ADAM J. GRZYB
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2106 Patterson St.
Greensboro, NC

FACETED STONE COMPETITION

I desire to enter the NCLS Faceted Stone Competition.

I will submit:

_____ entries in the single stone category.

_____ entries in the three stone category.

I understand that NCLS assumes no responsibility for loss or damage to my stones but that NCLS will make every effort to safeguard my property.

NAME _____ (please print)

ADDRESS _____

PHONE _____

NOTE: The last 4 digits of your phone number will be the identifying number of your entry.